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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,181

03/24/2005

Vencent Johannes Jacobus Montfort

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02/20/2009

LIU & LIU

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LOS ANGELES, CA 90071

EXAMINER

TAOUSAKIS, ALEXANDER P

ART UNIT

PAPER NUMBER

3726

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,181	<b>Applicant(s)</b> MONTFORT ET AL.	
	<b>Examiner</b> ALEXANDER P. TAOUSAKIS	<b>Art Unit</b> 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 11-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-5, 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Lam (6,541,284).**

1. Method for assembling a camera module comprising a substrate, a lens (89) and an image sensor chip (97) having a light-sensitive surface, wherein in an assembled state an optical axis of the lens extends in a z-direction and the light-sensitive surface of the image sensor chip extends at a pre-determined sensor surface position perpendicular to the z-direction (*See Abstract and Figure 16*), the method comprising the following steps:

- a) aligning a detector of a measuring device (115) with the optical axis of the lens (89) (*see Figure 16*);
- b) displacing the lens in the z-direction (*see column 7 lines 8-12*);

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c) determining an optimal z-position for the lens on the basis of measuring signals from the measuring device, wherein measuring is performed at a measuring position (see *column 7 lines 8-12*);

d) bringing the lens to the optimal z-position, preferably fixing the lens with respect to the substrate (see *column 7 lines 8-12*);

e) removing the measuring device (115) (see *Abstract and note that it is inherent that the measuring device is removed once the lens has been brought into position*) ; and

f) attaching the image sensor chip to the substrate (see *column 5 lines 20-22*).

2. Lam teaches the method according to claim 1, wherein the measuring device (115) is positioned at a bottom surface of the substrate (see *Figure 16*).

3. Lam teaches the method according to claim 1, wherein the measuring device (115) comprises a diaphragm opening aligned with the optical axis of the lens, and a light sensor (101)

receiving all light passing through the diaphragm opening, and wherein step c) comprises the step of determining the light intensity detected by the light sensor as a function of the lens position (see *column 7 lines 5-14, and note that the image sensor chip is part of the measuring device, and acts as the light sensor and the diaphragm opening, and furthermore note that focus measurement is a form of the light intensity*).

4. Lam teaches the method according to claim 1, further comprising the step of determining a maximum light intensity (see *column 7 lines 5-14, and note that an*

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*positioning the lens at its optimal focus is positioning it at its maximum light intensity because at optimal focus the largest amount of light is passing through the lens).*

5. Lam teaches the method according to claim 1, wherein the measuring position coincides with the sensor surface position, and wherein the displacement of the lens is stopped as soon as the optimal z-position is reached (*see column 7 lines 5-14*).

8. Lam teaches the method according to claim 1, wherein the displacement of the lens takes place step by step (*see column 7 lines 5-14, and note that the step is infinitesimally small, i.e. the measuring device continuously monitors the focus of the lens*).

9. Lam teaches the method according to claim 8, wherein the measuring position is at a pre-determined distance AZ2 from the sensor surface position, and wherein the predetermined distance AZ2 is larger than one step of the displacement of the lens (*see Figure 13, where the lens is at a predetermined distance, and note that the measuring device 115 continuously measures the position and focus of the lens, so the step is infinitesimally small*).

10. Lam teaches the method according to claim 1, wherein a lens assembly having a lens is press-fitted in a mount (81), which is fixedly attached to a substrate or an integral part thereof (*see column 6 lines 5-6*), the method comprising the step of pushing the lens assembly into the mount until the lens has reached a desired position (*see column 7 lines 5-17*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 6-7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lam (6,541,284).**

Lam teaches the method of claim 4, but fails to teach wherein displacement of the lens is continued after the optimal z-position is reached. At the time of the invention, it would have been an obvious matter of design choice to a person of ordinary skill in the art at the time, to have displaced the lens after the optimal z-position was reached because applicant has not disclosed that the method is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with Lam's method for assembling a camera module because either will produce an accurately positioned lens.

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Therefore, it would have been an obvious matter of design choice to modify Lam to continue displacing the lens and move the lens back to the optimal position, as claimed in claims 6 and 7.

20. Lam teaches the method according to claim 1 wherein the measuring device (115) may be removed before the image sensor chip (101) is attached to the substrate (83) *(see column 7 lines 5-19, where it discloses adhesively fixing the image sensor chip and the lens to the assembly)*.

Lam fails to teach explicitly teach removing the measuring device (115) before attaching the image sensor chip to the substrate (83).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the measuring device (115) of Lam before attaching the image sensor chip to the substrate (83) because once the chip is in focus the measuring device serves no purpose and would be an obstruction if it remains connected.

### ***Response to Arguments***

Applicant's arguments filed 12/3/2008 have been fully considered but they are not persuasive.

Applicant argues that Lam fails to disclose a separate measuring device. This is not found persuasive because Lam teaches separate measuring device (115), a computer, shown in Figure 16, and that the measuring device (115) determines the optimal focus sharpness with respect to a predetermined focal plane *(see column 7 lines 10-12)*. Furthermore, note that the device (115), i.e. computer, is connected to the

substrate 83 via a wire, shown in Figure 16, and removal of the computer involves unplugging said wire.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER P. TAOUSAKIS whose telephone number is (571)272-3497. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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